PNADF-791

FINAL REPORT

Covering Period (April 1, 2001 through December 31, 2005)

"Submitted to the U.S. Agency for International Development; bureau for Global Programs, Field Support and Research; Center for Economic Growth and Agricultural Development"

"A Substance Abuse Monitoring System for Israeli and Palestinian Communities"

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Grant No. TA-MOU-00-M20-009

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Executive Summary

The purpose of this effort was to determine the type and amount of adolescent drug use in specific communities in Israel, the Gaza Strip and the West Bank of the Palestinian Authority. The single most notable event having had significant impact upon the implementation of this project was the Intifada, (2000). This unrest basically set the tone or limit of the level of cooperation between our Israeli and Palestinian counterparts. The fear of physical reprisal and/or professional excommunication altered the international cooperation. The investigators felt it to be in the best interest of all participants to limit the exposure of the project in the media, including print, radio and television. Lastly, while there was regular email, telephone communication with periodic face to face contact at neutral locations, primarily in the United States, the U.S. investigators were discouraged by U.S.A.I.D. staff from visiting the Gaza Strip and West Bank data collection sites managed by Dr. Mohammed Afifi. At least annual visits to the data collection sites in Israel were made by Dr. Rawson and Mr. Hasson in an effort to monitor data collection activities, provide technical assistance and training in clinical and research methods. This same oversight could not be provided to the Palestinian Authority sites as a result of the political unrest.

This project is the outcome of a partnership between the Regional Alcohol and Drug Abuse Resources (RADAR) Center, Ben Gurion University, the University of California, Los Angeles, Integrated Substance Abuse Programs, and the Substance Abuse Research Center (SARC), Palestine. Experts who provided input and cooperation with this initiative were from the United States, National Institute on Drug Abuse, the World Health Organization, Israel Ministry of Labour and Social Affairs, Israel Anti-Drug Authority, the Palestinian Ministry of Health, Palestine Anti-Narcotic General Administration (ANGA), University of Maryland, Haifa University, Harvard University and the Friends Research Institute.

Among the major findings from Israel is the disengagement of high-risk youth from school in terms of dropout, absenteeism and tardiness to school. More than 26% of the youth studied reported no connection to school and 28% indicated they lack a structured activity during the evenings/night. On the Palestinian side, 26% of the school aged youth reported smoking regular use of cigarettes compared to a previous study, Health Behavior of School Aged Children Report (HSBC, 1999) where 17% of the youth surveyed reported regular cigarette use. As in the United States, the gateway drugs, including tobacco, alcohol, cannabis-marijuana and hashish, inhalants, and prescription drugs appear to be on the increase in each of the locations monitored. As was expected, alcohol use was not a notable problem in the Palestinian Authority. Consistent with the CASA Report, 2005 prescription drug use in adolescents is on the rise and is of significant international concern. Ease of access to these medications through family and friends, and the internet is a contributing factor.

Recommendations are provided for policy and program development purposes. The final reports were translated into Hebrew and Arabic to facilitate comprehension among policy makers.

Research Objectives

There is a wealth of data to support the contention that psychoactive (alcohol, tobacco and illicit drugs) drug use plays a major role in the public health, criminal justice and political agendas of many of the world's nations. Although there is wide geographical and cultural variation in the nature and extent of drug use and abuse, there is no society completely free from the problems of drugs and alcohol. There is a consensus that with knowledge of the types and amounts of substances being used, by whom and where they are being used, the proper allocation of health care, educational, social service and criminal justice resources can be more effectively conducted. One of the worst aspects of the drug problem is that it affects primarily those who are most vulnerable such as youth. In countries including Israel and Palestine, the number of marginalized young people is increasing. This is particularly so in urban areas where street life and all its aspects, including drug abuse and drug trafficking, is becoming the norm for a growing number of young people (UN, Economic and Social Council, 1999:3-4).

The most common information on drug abuse often relates to specific populations, namely students – youth in school. Such information, though valuable for the identification of trends and attitudes, does not cover the extent of drug use among those who have left school or among drop outs and truants. Household surveys have their limitations since youth may be reluctant to admit using drugs in the presence of their families. Additionally, the gender factor is not always considered in the collection of data on drug abuse among young people.

The purpose of this effort, modeled after the US National Institute on Drug Abuse (NIDA) Community Epidemiology Working Group (CEWG), was to develop a monitoring system of drug use and problem behavior among high-risk Israeli and Palestinian youth. The monitoring effort included the joint Israeli/Palestinian development of a very efficient brief data collection instrument, "SUSI – Substance Abuse Survey Instrument," that has proven to be useful for gathering uniform information over time and across locations. Such information is useful for policy and program service decision-making as well as human resources development training in the region.

The innovative aspect of this study is: 1) this is the largest study of its kind to be completed to date of drug use and problem behavior among high risk youth in Israel who have been referred to an alternative school because of learning and/or behavioral problems; who have dropped out of school; and/or, who have been adjudicated delinquent and referred by the courts for juvenile probation services. On the Palestinian side, this effort is the first to document drug use and problem behavior among high risk youth from Gaza and the West Bank. See list of Pertinent Literature used for this study

Methods and Results

Subjects

Data collection focused on high-risk youth from the southern (Negev – e.g., Beer Sheva and other population centers) and northern (Haifa) regions of Israel. The study cohort included 102 juvenile offenders referred by court authorities to the government sponsored Office of Youth Probation. Also, a group of 917 'other high-risk' youth including immigrants, youth in alternative special education/training programs, street youth, and those from low-income

neighborhoods were studied. The two study groups, hereafter, are referred to as "probation" and "other high-risk" youth.

The study sample in the Palestinian Territories, the Gaza Strip and the West Bank totaled 2207, 1204 boys and 1003 girls drawn from 57,000 and 76,000 school aged youth in the Gaza Strip and West Bank respectively.

The study sample, purposively selected, is considered large enough for a good estimate of problem youth substance use parameters; however, caution should be exercised in making generalizations about other youth. All study youth were asked to complete, on a voluntary and anonymous basis, a simply worded questionnaire in Hebrew or Arabic. Information was collected in a confidential manner complying with human subject research guidelines of Ben Gurion University, Haifa University, the Substance Abuse Research Center, Gaza-Palestine, and the Friends Research Institute in the United States. Every youth approached agreed to participate in the study and each one was advised that a project assistant responsible for distributing the questionnaire would be available to help with understanding the questions if necessary.

Instrument

The data collection instrument used for this effort has been titled SUSI (Substance Use Survey Instrument). It was developed by drawing on other data collection tools used for the U.S. National Institute on Drug Abuse (NIDA) Monitoring the Future – Adolescent Drug Use Survey (Johnston, et al., 2001); the U.S. Substance Abuse and Mental Health Services Administration (SAMHSA) National Household Survey on Drug Abuse (2001, 2003); and, research of substance use of high school age youth and others in Israel and elsewhere (Israelowitz, et al., 1996a, 1996b; 2002). Also, the instrument was developed with input from experts affiliated with universities and government agencies in the United States, Israel, Palestinian Territories and elsewhere. A detailed list of the people and their affiliations is provided in Appendix A. The instrument, prepared in English (Appendix B), was translated to Hebrew and then translated back to English for validity purposes by academic staff affiliated with Ben Gurion and Haifa Universities. For use in the Gaza Strip and the West Bank, the instrument was reviewed by experts from SARC, Al-Azhar and Al-Aqsa Universities, translated into Arabic and then back translated to English by staff at the Substance Abuse Research Center (SARC), Gaza-Palestinian Territory.

The SUSI data collection instrument includes *background variables* of gender, age, religion, level of religiosity, work status, day and evening activity pattern, and pattern of school absence and lateness. *Dependent variables* include age of first use; lifetime and last 30 day drug use; drug use related behavior (e.g., driving a car or being a passenger in a car with alcohol); problem behavior (e.g., fighting, carry a weapon, selling illegal drugs, theft, etc.); pattern of victimization; the level of ease/difficulty buying different drugs; amount of money spent in a typical week for drugs; and, attitudes/behavior related to the purchasing of drugs.

Validity and Reliability

Validation normally applies to instruments that measure latent constructs (underlying phenomena or conditions, such as depression), rather than for simple information-gathering instruments. Those information-gathering instruments that are validated (such as the Addiction Severity Index) are done so at the level of their scores that SUSI does not employ. Since the SUSI instrument asks very simple information, it is questionable whether the SUSI instrument requires validation.

SUSI questions about behaviors (e.g., substance use, criminal behaviors, driving under the influence of alcohol) are not verifiable. Test-retest using a time frame that allows sufficient time to ensure the participants have forgotten their responses does not seem to be particularly useful because these questions have associated time frames that will change between the baseline test and the re-test. Therefore, even if participants are being truthful with their responses, the data will be changing and the correlations are likely to be low. It is possible to do test-retest with very short intervals (1-2 days), although the implications of the resultant correlations are not as strong as if it were certain that the participants had forgotten their responses.

Logical, internal consistency checks on some of SUSI questionnaire items could be done. For example, number of times using a drug in past 30 days must be less than or equal to the number of times using it in life. However, even when a trained research assistant (RA) administers instruments like this, crosschecks are likely to come back with a number of errors. Therefore, unless an RA or someone else looks over the instruments and pick out these types of mistakes prior to releasing the participant and accepting the data, there appears to be little point in doing this (Reiber, 2002).

Face validity is the general concept of whether the instrument "seems right." The SUSI instrument has face validity based expert review.

Analysis

Descriptive statistics were used for analysis of the youth responses – probation and other high-risk youth. Chi Square and t test analyses were the statistical measures used to compare the two groups of youth in terms of background characteristics, school, substance use patterns, problem behavior, drug accessibility and patterns of obtaining drugs.

Results-Israel

STUDY YOUTH (N=1,019)

Background characteristics of the study youth are: age - average = 16.2 years, median = 16 years; religion – 91% Jewish, 9% other including Muslim and Christian; level of religiosity – 74% not religious; mother's country of origin – 49% Israel, 30% Former Soviet Union, 9% other Middle East country, 2% Ethiopia, and 10% other; father's work status – 14% unemployed; mother's work status – 24% unemployed; youth work status – 80% unemployed; where most time is spent by youth during the day – 26% reported no school connection (i.e., dropout); where most time is spent by youth during the evening/night – 28% reported hanging around in the streets, malls, playgrounds, parks, etc.; among youth that reported a school connection, the

average number of days missed from school during the last month is 3; and, the usual number of times late for school during the last month is 5.

Comparing the 2 groups of youth, probation and other high risk, significant differences exist for the following factors: fathers' unemployment – 30% of probation youth fathers was unemployed compared to 12% of other high-risk youth fathers ($p<.001$); mothers' unemployment – 40% of the probation youth mothers was unemployed compared to 22% of other high-risk youth mothers ($p<.001$); no connection with school – 33% of the probation youth reported no connection with school compared to 24% of the other high-risk youth ($p<.001$); absence from school in the last month – probation youth (in school) reported an average of about 4 days of absence compared to 3 days by other high-risk youth ($p<.01$); and, late to school in the last month – probation youth (in school) reported being late on average about 7 times compared to 5 times by other high-risk youth ($p<.05$).

Drug Use Patterns

Cigarette Use

Thirty percent (30%) of the study youth reported smoking cigarettes.

Comparing the 2 groups of youth, results show: 67% of the probation youth smoke cigarettes compared to 26% of other high-risk youth ($p<.001$). Regarding the number of cigarettes smoked per day, probation youth smoke between 11-15 cigarettes compared to 6-10 cigarettes by other high-risk youth ($p<.01$).

Age of First Use

The median age for first time use of the major drugs used is (listed by youngest to oldest age): inhalants – 12; prescription drugs (e.g., sedatives) – 13; cigarettes – 13; beer – 13; wine – 13; hard liquor – 15; marijuana – 15; ecstasy – 15; and, hashish – 16. A small number of youth reported using other drugs and the age of first use is: stimulants – 14; LSD – 16; heroin - 16; cocaine – 16; crack cocaine – 17; and, opium – 17.

No significant differences were found regarding age of first use when the two groups were compared.

Life Time Use

The following percentages reflect "life time" use of each substance by the study youth (listed by most to least used): beer – 73%; wine - 58%; hard liquor – 52%; prescription drugs – 15%; marijuana – 13%; hashish – 10%; inhalants – 7%; ecstasy – 4%; LSD – 2%; stimulants – 2%; cocaine – 1%; crack cocaine – 1%; opium – 1%; and, heroin – 1%.

Comparing the 2 groups of youth, significant differences exist in terms of: beer – 78% of the probation youth compared to 72% of other high-risk youth ($p<.01$); marijuana - 33% of the probation youth compared to 11% of other high-risk youth ($p<.001$); hashish – 28% of the probation youth compared to 8% of other high-risk youth ($p<.001$); prescription drugs – 15% of other high-risk youth compared to 13% of the probation youth ($p<.05$); ecstasy – 13% of the probation youth compared to 3% of other high-risk youth ($p<.001$); stimulants – 6% of the probation youth compared to 1% of other high-risk youth ($p<.01$); LSD - 10% of the of the probation youth compared to 1% of other high-risk youth ($p<.001$); and, heroin – 4% of the probation youth compared to 1% of other high risk youth ($p<.01$).

Last 30-Day Use (see Table 4)

The following percentages reflect "last 30 day use" for each substance (listed by most to least used): beer – 53%; wine - 42%; hard liquor – 37%; prescription drugs – 9%; marijuana – 6%; hashish - 5%; inhalants – 4%; ecstasy – 2%; stimulants – 1%; LSD – 1%; cocaine – <1%; crack cocaine – <1%; heroin – <1%; and, opium – 0%.

Comparing the 2 groups of youth, significant differences exist in terms of: marijuana - 15% of the probation youth compared to 5% of other high-risk youth ($p<.001$); and, LSD - 3% of probation youth compared to 1% of other high-risk youth ($p<.05$).

Alcohol Use - beer, wine and hard liquor

Last Week Use

In response to the question, did you drink alcohol during the last week? – 45% reported that they had a least one drink or more. This percentage does not include those who had a cup of wine for religious purposes.

Examining the 2 groups of youth, 61% of the probation youth reported that they used alcohol compared to 43% of other high risk youth ($p<.01$).

Binge Drinking

Youth were asked whether they had 5 or more drinks on one drinking occasion during the past 30 days. In response to this question, 28% reported binge drinking.

Examining the 2 groups of youth, 40% of the probation youth reported binge-drinking behavior compared to 27% of other high-risk youth ($p = .07$).

Been in a Car when the Driver Used Alcohol

Youth were asked if they were in a car during the past month when the driver had been drinking. In response to this question, 13% reported yes.

Examining the 2 groups of youth, 23% of the probation youth reported being with a car driver who had been drinking compared to 12% other high-risk youth ($p<.01$).

Driving a car or motorcycle and drinking

Youth were asked if they drove a car or motorcycle, during the past month, when they had been drinking. In response to this question, 6% reported yes.

Examining the 2 groups of youth, 14% of the probation youth reported driving a car or motorcycle when they had been drinking compared to 5% of other high-risk youth ($p<.05$).

Problem Behavior

Last 12 months

Youth were asked about their problem behavior – e.g., being in a serious fight, carrying a weapon, selling illegal drugs, and stealing. In response to this question, 27% reported fighting; 10% carried a weapon; 3% sold drugs; and, 15% were involved in stealing.

Examining the 2 groups of youth, 54% of the probation youth reported fighting compared to 24% of other high-risk youth ($p<.001$); 19% of the probation youth carried a weapon compared to 9% of other high-risk youth ($p<.05$); 8% of the probation youth sold drugs compared to 2% of other high-risk youth ($p = .08$); 27% of the probation youth were involved in

stealing compared to 14% of other high-risk youth ($p<.05$); and, 38% of the probation youth compared to 25% of other high-risk youth reported that relations with family members had deteriorated during the last 12 months ($p<.01$).

Victimized

Youth were asked about being victimized during the past 12 months - i.e., having something stolen; having property damaged; being threatened with a weapon; and being injured - with or without a weapon. In response to this question, 53% reported having had something stolen; 31% said they had property damaged; 7% said they were threatened with a weapon; 4% said someone injured them with a weapon; and, 21% reported being injured by someone without a weapon.

Examining the 2 groups of youth, the only significant difference was that 15% of the probation youth had been threatened by someone with a weapon compared to 7% of other high risk youth ($p <.05$).

Drug Accessibility

Youth were asked whether it was possible to obtain alcohol and drugs. In response to this question, youth reported the following (listed by most to least accessible): alcohol – 93%; inhalants – 78%; marijuana – 72%; hashish – 72%; ecstasy – 67%; prescription drugs– 67%; stimulants – 61%; LSD – 55%; opium – 54%; cocaine – 54%; and, heroin – 53%. Both groups had similar response patterns to the issue of accessibility.

Money Spent on Drugs

Youth were asked how much they spend on selected drugs during a typical week. In response to this question, youth reported the following average amounts in shekels (NIS): cigarettes – 59; beer – 27; wine – 36; hard liquor – 35; marijuana – 51; hashish – 94; ecstasy – 149; inhalants – 21; and, LSD – 50.[3]

Examining the 2 groups of youth, significant differences exist. Regarding cigarettes, probation youth spend an average of 77 (NIS) each week for more than 5 packs compared to 54 (NIS), more than 3 packs, by other high-risk youth ($p<.01$).

Patterns of Obtaining Drugs

Youth were asked how they obtain drugs (licit and illicit). Youth responding to this question reported that: 6% trade CD's, personal property, etc.; 1% trade sex; 3% exchange drugs; 20% use their own money; 7% take a loan for money to be paid back later; 2% use property of someone else in exchange for drugs; and, 3% gamble.

Examining the 2 groups of youth who use drugs, the following significant differences exist: exchanging drugs – 8% of probation youth compared to 3% of other high-risk youth ($p<.05$); using their own money to buy drugs - 45% of probation youth compared to 17% of other high-risk youth ($p<.001$); taking loans - 21% of probation youth compared to 6% of other high-risk youth ($p<.001$); and, gambling - 9% of probation youth compared to 3% of other high-risk youth ($p<.01$).

Debt

Youth were asked if they owed money for the drugs they obtained. In response to this question, 11% of the youth reported yes. Examining the 2 groups of youth, 23% of the probation youth compared to 10% of other high-risk youth reported they owe money for obtaining drugs. This

difference is significant ($p<.01$). On average, however, other high-risk youth owe more money than probation youth – other high-risk youth owe 377 shekels or $84 compared to probation youth who owe 261 shekels or $58.

Results-Palestinian Territories

STUDY YOUTH SAMPLE (N= 2207)

Background characteristics of the study youth:

The random sample was selected from both Gaza Strip (1034 students) and the West Bank (1173 students). Gender distribution was (1204 boys) and (1003 girls). Average age was 16.4 years (SD=1.2), with 98.5% of the sample were Moslems, and 1.5% Christians. The sample represented the North, Middle, and the South of both Gaza Strip (GS) and the West Bank (WB). 22.5% of the fathers in the WB, and 33.5% in Gaza Strip were unemployed.

Drug Use Patterns among High Schools Students in Palestian Territories:

Cigarette smoking:

Lifetime smoking: 26% boys and 2.5% girls in GS had tried cigarettes at least once , while in the WB the figures were slightly higher with 35% of boys and 5.2% of girls indicating they had tried cigarettes at least once.

Frequent smokers: 22% of boys and 1.8% girls in GS high schools are smoking frequently. compared to 28.5% boys and 3.8% girls in the WB.

Average age at first time smoking: 13 years for boys (SD=2.62) and 13.5 years for girls (SD=2.1).

Understanding of the harmful effects of smoking: 25.6% of the boys and girls who smoke consider smoking harm as little or no harm compared to 6.2% of the non-smokers.

Where do respondents spend their evenings? 49.5% of smoking boys compared to 30.3% of nonsmoking boys are hanging out in the streets and recreation places, while 18.3% the girls who smoke spend their evenings in hanging out in the streets as compared to 6.5% of the non-smoking girls.

School absenteeism: Boys who smoke cigarettes missed an average of 2.4 school days (SD=4.4) compared to 0.92 days (SD=1.9) for nonsmokers. On the other hand, girls who smoke missed an average of was 2.2 days (SD=3.9) to 0.45 days (SD=2.1) for those girls who do not smoke.

Use of other drugs among frequent smokers: lifetime use of one or more of drugs (psycho active tablets, marijuana, heroin, inhalants, alcohols, or cocktails) showed that 19% of the boys who smoke cigarettes use have used other drugs compared to 4% of non-smoker boys. 15% of the

girls who smoke cigarettes indicated having used other drugs at least on one occasion as compared to 1.6% of the non-smoking girls.

Alcohol:

Frequent use of alcohol including beer: 6.2% of high schools boys in The WB and 3.8% of GS boys had used alcohol (including beer). As for girls 2.1% in The WB compared to 1.6% in GS.

Average age at first alcohol use: 14 years (SD=1.8) for boys and 14.6 years (SD=2.1) for girls.

Knowledge of the harmful effects of alcohol: 30% of alcohol using boys consider it not-harmful compared to 6% of the non-using boys. For girls, 15.2% of the girls using alcohol consider it not-harmful compared to 1.9% of the non-users.

Where alcohol users/non-users spend their evenings: 55.7% of alcohols using boys compared to 32.7% of non-using boys are hanging out in the streets and recreation places. And for girls, 23% of the alcohol using girls hang out in streets in evening compared to 5.6% of non-using girls.

Absence of alcohol users/non-users from school: The average absence in the last month was 3.3 days (SD=6.1) for alcohol using boys compared to 0.92 days (SD=2.5) for non alcohol using boys; and for girls was 1.7 days (SD=3.1) for alcohol using girls compared to 0.45 days (SD=2.8) for those who do not use alcohol.

Use of other drugs among frequent alcohol users: 62% of alcohol using boys had used one or more other dugs including (psycho active tablets, marijuana, heroin, inhalants, alcohols, or cocktails), compared to non-user boys. For girls, 55% of alcohol user had indicated they used other drugs on one or more occasions compared to 2% of non-user girls.

Psycho-active tablets (Tranquilizers, hypnotic, CNS Stimulants):

Frequent use: 6.5% of the boys and 7.2% for girls, in the high schools of The WB and GS reported frequent use of psycho-active tablets.

Average age at first time use: average age 13.5 years (2.3) for boys and 14.3 years (1.5) for girls.

Knowledge of the harmful effects: 19% of the boys who use psycho-active tablets consider them to not be harmful as compared to 17% of non-user boys. While, 11.6% of the girls who use psycho-active tablets consider them not to be harmful as compared to 8.2% of the non-users.

Where do psycho-active tablets users and non-users spend their evenings?: 60% of boys using psycho-active tablets spend their evenings hanging out compared to 37% of their non-using counterparts, and 11.4% of girls using psycho-active drugs spend their evenings hanging out in the street compared to 4.4% of the non-using girls.

Absence from school: average absence from school for psycho-active tablet using boys (last 30 days) is 2.83 days (SD=5.2) and 1.17 days (SD=2.56) for non-using boys. Using girls missed 1.03 (SD=2.6) days, compared to 0.37 (SD=4.9) days of non-using girls.

Use of other drugs among frequent psycho-active tablets users: 33.5% of user boys had used other drugs (psycho active tablets, marijuana, heroin, inhalants, alcohols, or cocktails) at least once, compared to 3.9% of non-using boys. While 8.9% of the psycho-active tablet using girls had used other drugs at least once compared to their non-using counterparts. There is a slight increase in Gaza Strip adolescents using psycho-active tablets as opposed to their West Bank counterparts.

Inhalants:

Frequent inhalant use: 11.8% of boys in the WB and 7% of boys in GS had used inhalants frequently. For girls, 7.3% of girls in the WB use inhalants compared to 11.5% of girls in GS. The most common inhalant used by girls is nail polish remover (Acetone).

Average age at first time use: the average age for first use was 12.8 years for boys (SD = 3.7) and 12 years for girls (SD = 2.7)

Knowledge of the harmful effects of inhalants: 53% of the inhalant using boys consider inhalants not to be harmful compared to 20.5% of non-user boys. While, 50% of the inhalant using girls considered inhalants to not be harmful as compared to 13.1% their non using counterparts.

Where do inhalant users and non-users spend their evenings?: 53.1% of user boys spend their evenings hanging in streets compared to 37.3% of non-users. While, 8.9% of the inhalant using girls spend their evenings hanging out in the streets compared to 4.9% of the non-using inhalant girls.

Absence from school: In the last 30 days, inhalant using boys missed an average of 1.98 school days (SD=4.9) as compared to 1.23 days (SD=2.7) for non inhalant using boys. This measure was insignificant for girls not using inhalants.

Other drug use among frequent inhalants users: 29.7% of inhalant using boys responded having used one or more other drugs (psycho active tablets, marijuana, heroin, inhalants, alcohols, or cocktails) compared to 4% of the non-users. While, 4.4% of the inhalant using girls used one or more other drugs as compared to 1% of the non-inhalant using girls.

Marijuana (Bango):

Frequent use: 2.9% of boys in The WB and 2% of boys in GS were frequent marijuana (Bango) users. While, for girls, 1% in the WB and 0.7% in GS indicated they used marijuana frequently.

Average age at first time use of marijuana: for boys was 14.75 years (SD=2.65). and for girls was 15.8 years (SD=0.65).

Knowledge of the harmful effects of marijuana: 21.9% of marijuana using boys consider it not-harmful compared to 3.9% of the non-using boys. While, 20% of using girls consider it not-harmful compared to 1.4% of non-using girls.

Where do marijuana using boys and girls spend their evenings: 75.7% of the marijuana using boys indicated they spend their evenings hanging out in streets as compared to 37% of the non-using boys. Marijuana using girls, (50%) hung out in the streets as compared to 4.9% of their non using counterparts.

Absence from school: Marijuana using boys missed an average of 4.17 (SD=6.8) school days in the past 30 as compared to 1.13 missed school days for non-users (SD=2.5). While girls using marijuana missed an average of 4.1 school days (SD=9.2) compared to 0.43 days (SD=1.9) for non-using females.

Use of other drugs among marijuana users: 100% of using boys and girls had used one or more other drugs (psycho active tablets, marijuana, heroin, inhalants, alcohols, or cocktails).

Heroin and cocktails:

Frequent use: 1% of boys in WB high schools and 0.8% of boys in GS. While, for girls, 0.6% of girls in WB and 0.4% of GS girls are using heroin. Sniffing is the primary route of administration.

Average age at first use: 14.67 years for boys (SD=2.06) and 16 years for girls.

Knowledge of the harmful effects of heroin: 33.3% of the boys using heroin consider their use not harmful compared to 9.8% of non-user boys. Of the girls using heroin, 14.3% consider their use not harmful compared to 8.8% of non heroin using girls.

Where heroin using boys and girls spend their evenings: 66.7% of the heroin using boys spend their evenings hanging out in the streets compared to 38.2% of non-using boys. While, 42.9% of the heroin using girls spend their evenings hanging out in the streets compared to 5.2% of the non-using girls.

Absence from school: Heroin using boys missed an average of 2.85 school days in the last 30 days (SD=4.5) compared to 1.25 days for non-using boys (SD=2.97). Heroin using girls missed an average of 4.43 school days (SD=6.5) compared to 0.44 days (SD=1.87) for non-using girls.

Use of other drugs among heroin users: 100% of the heroin using boys and girls reported using at least one other drug (psycho active tablets, marijuana, heroin, inhalants, alcohols, or cocktails).

Other general indicators:

Peer pressure to use drugs: 24.4% of the boys who smoke cigarettes reported strong peer pressure to smoke, compared to 17.5% of the non-smokers. While, 30.8% of the cigarette

smoking girls reported strong peer pressure to smoke compared to 8.5% of non-smoker. Similar results were found for other drugs.

Problem behaviors: Carrying a weapon (for self defense): 18% of the boys in the WB, and 9% of boys in GS who are frequently using one or more drugs indicated they had carried a weapon on more than three occasions in the past year compared to 3.5% in WB and 1.6% in GS of non-users.

Victimization: stolen property: 8% of boys in the WB, and 14% of boys in GS who are frequently using one or more drugs had property stolen on more than 3 occasions last year, as compared to 2% in WB and 1.2% in GS of the non-users.

Injured by others: 6.5% of the boys in WB, and 6% of boys in the GS who are frequently using one or more drugs report having been injured on 3 or more occasions in the last year as compared to 2% of the non users in the WB and 1.2% of the non-users in the Gaza Strip.

Pertinent Literature

Bar Hamburger R, Rahav G, Teichman M, Gil R & Rosenblum Y (1998). National Survey on the Use of Psychoactive Drugs among Israeli Inhabitants: Epidemiological Study. Jerusalem: Israel Anti-Drug Authority.

Bar Hamburger R, Rahav G, Teichman M, Gil R & Rosenblum Y (2002). National Survey on the Use of Psychoactive Drugs among Israeli Inhabitants: Epidemiological Study. Jerusalem: Israel Anti-Drug Authority.

Barnea Z, Rahav G & Teichman M (1992). Alcohol consumption among Israeli youth--1989: epidemiology and demographics. *British Journal of Addiction*, Feb; 87(2): 295-302

Barnea Z, Rahav G & Teichman M (1993). Substance use and abuse among deviant and non-deviant adolescents in Israel. *Journal of Drug Education*, 23(3), 23-236.

Center for Substance Abuse Treatment CSAP (1993). *Guidelines for the Treatment of Alcohol and Other Drug-busing Adolescents*. Treatment Improvement Protocol (TIP) Series, No. 4. DHHS Pub. No. (SMA) 93-2010. Washington, D.C.: U.S.
Government Printing Office.

Center for Substance Abuse Treatment – CSAP (2002). *Science-based Prevention Programs and Principles Effective Substance Abuse and Mental Health Programs for Every Community*, DHHS Pub. No. (SMA) 03-3764. Washington, D.C.: U.S.
Government Printing Office.

Coulson N, Eiser C & Eiser J (1997). Diet, smoking and exercise: Interrelationships between adolescent health behaviors. *Child Care Health Development*, 23 (3), pp. 207-216

Crowe A & Reeves R (1994). *Treatment for alcohol and other drug abuse*, DHHS Publication, (SMA), 94-2075, Washington, D.C.

Dembo R, Williams L, Fagan J & Schmeidler J (1993). The relationships of substance abuse and other delinquency over time in a sample of juvenile detainees. *Criminal Behavior and Mental Health*, 3(3), 158-179.

European Monitoring Centre for Drugs and Drug Addiction. *Annual Report on the State of the Drug Problem in the European Union*. Lisbon, Portugal, 2000.

Glynn T & Haenlein M (1988). Family theory and research on adolescent drug use: A review. *Journal of Chemical Dependency Treatment*, 1(2): 39-56.

Hampl J & Betts N (1999). Cigarette use during adolescence: Effects on nutritional status, *Nutrition Review*, 57(7), pp. 215-221.

Hawkins J (2002). Risk and Protective Factors and Their Implications for Preventive Interventions for the Health Care Professional. Chapter 1 in Schydlower, M. (ed.) *Substance Abuse: A Guide for Health Professionals*. Academy of Pediatrics, Second Edition.

Hawkins J, Lishner D, Jenson J & Catalano R (1990). Delinquents and drugs: What the evidence suggests about prevention and treatment programming. In B. Brown and A. Mills (1990). *Youth at high risk for substance abuse*, Rockville, MD: National Institute on Drug Abuse, pp. 81-131.

Hawkins J, Lishner D, Catalano R & Howard M (1985). Childhood predictors of adolescent substance abuse: Toward an empirically grounded theory, *Journal of Children in Contemporary Society*, 18, (1-2):11-48.

Isralowitz R & Peleg A (1996a). College Student Alcohol Use: The Association of Background Characteristics and Regular Drinking Patterns, *Drug and Alcohol Dependence*, 42: 147-153.

Isralowitz R & Troestler N (1996b). Substance Use: Toward an Understanding of Its Relation to Nutrition-Related Attitudes and Behavior Among Israeli High School Youth, *Journal of Adolescent Health*, Vol. 19(3): 184-189.

Isralowitz R & Slonim-Nevo V (2002). Immigrant and Delinquent Youth: Patterns of Substance Abuse, *Addiction Research and Theory*, Vol. 10(4), pp. 399-414.

Isralowitz R (2002). *Drug Use, Policy and Management*, 2nd Edition, Westport, CT: Auburn House.

Jarvik M (1988). Does smoking decrease eating and eating increase smoking? In: W. Martin, et al., Eds. Tobacco Smoking and Nicotine: A Neurobiological Approach. New York: Plenum Press, 1988.

Johnston L, & O'Malley P (1985). Issues of validity and population coverage in student surveys of drug use. In B. Rouse, M. Kozel, & L. Richard (Eds.) *Self-Report Methods of Estimating Drug Use: Meeting Current Challenges to Validity*. NIDA, Washington, D.C., pp.31-54.

Johnston L, O'Malley P & Backman J (2002) "Teen smoking has declined in 2002, more than offsetting the large increases in the early 1990s – Monitoring the Future Survey." University of Michigan News and Information Services: Ann Arbor, MI. [On-line]. Available: www.monitoringthefuture.org.

Johnston L, O'Malley P & Backman J (2003). Monitoring the Future: National Survey Results on Drug Use: Overview of Key Findings. 2002 (www.monitoringthefuture.org).

Johnston L, O'Malley P & Backman J (2003). Monitoring the Future: National Survey Results on Drug Use, 1975-2002, Secondary School Students, Vol. 1, NIDA, Bethesda, MD,

Join Together Online (2003). Researchers find link between drinking, teen violence, Boston School of Public Health, Sept. 11.

Leukefeld C. Logan T & Clayton R (1998). Adolescent drug use, delinquency, and other behaviors, in T. Gullotta, et al., *Delinquent Violent Youth*, Thousand Oaks, CA: Sage, pp. 98-128.

Lorion R, Bussell D & Goldberg R (1991). Identification of youth at high risk for alcohol or other drug problems. In E. Goplerud (ed.) *Preventing adolescent drug use: From theory to practice*. DHHS Pub. No. (ADM) 91-1725. Washington, D.C.: U.S. Government Printing Office, pp. 53-90.

Lynskey, M (2000). The effects of adolescent cannabis use on educational attainment review, *Addiction*, 95(11): 1621-1630.

National Academy of Sciences (2003). "Reducing Underage Drinking: A Collective Responsibility" www.nap.edu

National Institute on Drug Abuse – CEWG (2002). *Epidemiologic Trends in Drug Abuse*, Vol. 1: Highlights and Executive Summary, Rockville, MD: United States National Institutes of Health, 2002.

National Institute on Drug Abuse (2003). Brief Strategic Family Therapy for Adolescent Drug Abuse, www.drugabuse.gov/TXManuals/bsft/BSFT2.html

National Institute on Drug Abuse (2003). InfoFacts *High School and Youth Trends*, (www.nida.nih.gov/Infofaz/HSYouthtrends.html).

O'Malley P, Carey K & Maisto S. (1986). Validity of young adults' reports of parental drinking practices *Journal of Studies on Alcohol*, 47: 433-435.

Physician Leadership on National Drug Policy – PLNDP (2002). Position Paper on Adolescent Drug Policy, Brown University, Providence, RI.

Reiber C (2002). Issues of Reliability and Validity – Substance Abuse Survey Instrument, Integrated Substance Abuse Programs, University of California, Los Angeles. (e-mail correspondence).

Rouse B, Kozel N & Richards L (Eds.) (1985). *Self-Report Methods of Estimating Drug Use: Meeting Current Challenges to Validity*, NIDA, Publication, (PB) 89-125025 ,Washington, D.C.

Schinke S, Botkin G, & Orlandi M (1991). *Substance abuse in children and adolescents: Evaluation and intervention*. Newbury Park, CA: Sage Publications.

Substance Abuse Mental Health Services Administration (SAMSHA), United States Department of Health and Human Services, "National Household Survey on Drug Abuse Main Findings," 2001.

Substance Abuse Mental Health Services Administration (SAMSHA), United States Department of Health and Human Services, "Results from the 2002 National Survey on Drug Use and Health: National Findings," 2003.

United Nations Office for Drug Control and Crime - ODCC (2002). *Global Illicit DrugTrends*. New York: ODCCP Studies on Drugs and Crime.

U.S. Department of Justice, Office of Juvenile Programs (2001). "Comparison of Drinking Rates and Problems: European Countries and the United States" (http://www.ncjrs.org/html/ojjdp/compendium/2001).

United Nations Office on Drugs and Crime – ODCC (2003). Ecstasy and Amphetamines Global Survey 2003 <www.unodc.org/unodc/press_release2003-09-23

Williams G, Aitken S & Malin H (1985). Reliability of self-reported alcohol Consumption in a general population, *Journal of Studies on Alcohol*, 46, pp..227-223

World Health Organization, (2002) "Hazardous Harmonization in Smoking by European Youth." (http://www.who.dk/document/cma/PB032002e.pdf)

Impact Relevance and Technology Transfer:

This study demonstrates an approach to monitoring drug use and problem behavior among high-risk youth. Like NIDA's Community Epidemiology Working Group, effort must be promoted over time and across locations in order to generate success as a surveillance system of drug use patterns and trends, as well as emerging drug problems and issues in Israel.

This study, like other research, shows that drug use tends to begin at about age 12-13 with inhalants, prescription drugs, cigarettes and alcohol. Research shows that tobacco and alcohol are the most commonly used drugs; and, it is important to note that these substances correlate other illicit drug use.

Information from this study shows that there are a number of early warnings that signal problem behavior among youth. They are:

- Initiation of drug use before 12 or 13;
- Daily or weekly use of at least one drug; and,
- Poly-drug use.

Age is a key determinant in patterns of drug use. For many youth, it has been found that as they advance in age the amount of illicit drug use reduces (Abt Associates, 1994; PLNDP, 2002). It must be said, however, that the opportunity to reduce drug use over time tends to be less for those youth who face multiple risk factors and who start using drugs at an early age. For the population of high-risk youth in Israel, it seems appropriate that a 'fire wall' prevention strategy be developed to provide: 1) regular monitoring of drug use patterns and problem behavior; 2) effective low cost intervention strategies with priority attention given to the 'gateway' drugs – cigarettes and alcohol (see CSAP, Science-Based Prevention Programs and Principles: Effective Substance Abuse and Mental Health Programs for Every Community – 2002 as a resource guide of innovative and effective programs); 3) treatment programs for youth with problem behavior associated with drug use; and, 4) effective education and training of drug service personnel.

Finally, additional research is needed to develop a more thorough understanding of high-risk youth and drug use in Israel. Specifically, study is needed of youth workers to determine the level of congruity between their assessment of drug use and problem behavior and what youth are reporting. Such information will be useful for staff development training and services development. Also, research is needed to assess the patterns of drug use and problem behavior among underserved populations. Specifically, two groups of particular concern are: females - youth and young adults; and, immigrants – youth with parents from the Former Soviet Union and Ethiopia.

The information generated from this study, both the Israeli and Palestinian, has and is providing a unique opportunity to define a common agenda and move forward through additional research, training, and model interventions to address the problem of drug use among high risk youth.

From a technology sharing and transfer perspective, this project has been very success. Also, the effort serves as a platform for additional Middle East initiatives e.g., linking Israel with its neighbors to address the problem of cigarette use among high risk youth. Based on this MERC initiative, a USAID-MERC pre-proposal has been submitted and reviewed for full proposal development. Also, this effort has provided information and knowledge leading to the development of a USAID-CDR proposal calling for the transfer of technology to Kenya from Israel to address the problem of drug use among "street youth" in urban and rural settings there.

This project has created a capability in Israel and Palestine for monitoring high risk drug use. The initiative has promoted cooperation among the Israeli and Palestinian scientists and colleagues that is standing the test of time and turmoil in the region. Additional initiatives are being planned and it is expected that cooperation will continue to move forward among the principal investigators.

Project Activities/Outputs:

A. Books

Israelowitz, R., Afifi, M. and Rawson, R. (eds.) (2002) *Drug Problems: Cross Cultural Policy and Program Development*, Auburn House: Greenwood Publishers.

B. Refereed Articles in Scientific Journals

Israelowitz, R., Sussman, G., Afifi, M., Rawson, R. Babor, T., & Monterio, M. (2001). Substance Abuse Policy and Peace in the Middle East: A Palestinian and Israeli Partnership, *Addiction*, 96, 973-980.

C. Chapters in Collective Volumes

Rawson, R., Hasson, A., Israelowitz, R. & Afifi, M. (2002). Middle East Drug Use watch (MEDUW): A Trilateral System to Measure the Type and Extent of Psychoactive Substance Use in Palestinian and Israeli Communities. In Israelowitz, R. and Rawson, R. (eds.), *Drug Problems: Cross-Cultural Policy and Program Development*, Auburn House, 151-164.

D. Recent Lectures and Presentations at International Meetings and Invited Seminars

2005 – "Drug Use and High Risk Adolescents," Poster Presentation. College on Problems of Drug Dependence, (Israelowitz, R. & Afifi, M.D., Orlando, Florida - June 20).

2005 – "Middle East Regional Cooperation and Drug Problems," US Agency for International Development, (Israelowitz, R. & Afifi, M.D., Taba, Egypt - March 28-29).

2004 – "High Risk Youth Drug Use and Problem Behavior in the Middle East," US National Institute on Drug Abuse International Research Forum on Drug Abuse:
Progress Through Collaboration, (Israelowitz, R. & Afifi, M.D., San Juan, Puerto Rico - June 14).

2003 – "Substance Abuse in the Middle East: A Model of Cooperation," US National Institute on Drug Abuse International Research Forum on Drug Abuse: Emerging Trends and Patterns in Drug Abuse/College on the Problems of Drug Dependence, (Israelowitz, R. & Afifi, M.D., Miami, Florida - June 12).

2002 – "Development of an Early Warning Approach to Monitoring Substance Use Among Youth at Risk in Israel and the Middle East," Community Epidemiological Working Group, US National Institute on Drug Abuse, (Israelowitz, R. & Afifi, M.D., Miami, Florida - December 10-13).

2002 – "Building a Drug Use Warning System in Palestinian and Israeli Communities," International Society of Addiction Medicine, (Israelowitz, R. & Afifi, M.D., Reykjavik, Iceland - October 4).

2002 – "Information Center Development: Regional Alcohol and Drug Abuse Resources (RADAR) in an International Context," US Substance Abuse and Mental Health Services Administration, RADAR Network International/National Conference, (Israelowitz, R. & Afifi, M.D. Denver, Colorado - August 6).

2002 – "Substance Abuse Monitoring in Israeli and Palestinian Communities," US National Institute on Drug Abuse International Forum: Building International Research on Drug Abuse: Treatment Innovations, (Israelowitz, R. & Afifi, M.D., Quebec City, Canada - June 12).

2002 – "Development of a CEWG Early Warning System for Youth at Risk Drug Abuse in Israel," US National Institute on Drug Abuse, Community Epidemiological Working Group, (Israelowitz, R. & Afifi, M.D., Philadelphia, Pennsylvania - June 10).

2001 – "Middle East Drug Use Watch: A Tri-lateral Program to Collect Drug Use Information," American Public Health Association, (Israelowitz, R. & Afifi, M.D., Atlanta, Georgia - October 22).

Project Productivity: Did the project accomplish all of the proposed goals. Absolutely.

From the outset of this project, it was a team effort between the investigators, Drs. Afifi, Israelowitz and Rawson. Each member participated in every aspect of this project from the initial submission to USAID through the data analysis and preparation of this final report. Drs. Afifi and Israelowitz were able to garner significant support from the local community including but not limited to representatives from the Ministries of Labor and Social Affairs, Ministry of Education, Ministry of Health, local law enforcement, religious and community leaders. Staff was trained on research methods, survey administration and data analysis in Israel and the Palestinian Territories. Representatives from Ministries, Universities, local school boards, and non-governmental agencies from Israel, the Palestinian Territories and the United States were brought together to make this project possible. Given the political climate, this was no easy task.

We will not go into detail here of the number of meetings, presentations, and trainings that were facilitated through the effort of this project as they have been listed in detail in the Semi-annual reports.

Local steering committees were established from community leaders in Israel and the Palestinian Territories to provide direction on the implementation of this project including the development of the survey instrument, approval and access to the school system, shape the data collection process, analysis and use of the data. The input and approval of the steering committees, proved to be invaluable in the day to day operations.

More than 3000 surveys were collected and analyzed, the largest survey of its kind in the Middle East. The information obtained during the course of this effort will assist policy makers and community leaders in determining how to best utilize community resources to address the

problem of substance abuse in their nation's youth. While the investigators cannot control how, or whether or not this information is utilized, there is significant value in providing this to governmental and community leaders.

Several physicians and allied health personnel sponsored through this project received a two month in service training at the Behman Hospital, Helwan, Cairo, Egypt on addiction medicine.

Through the efforts of the investigators, Darren Urada, Ph.D. of the UCLA Integrated Substance Abuse Programs another proposal was submitted to the United States Institute on Peace to bring together substance abuse experts from Europe, the Middle East and the United States. This project was funded and a steering committee was developed, including the investigators of this project Drs. Afifi, Isralowitz, and Rawson and project director Mr. Hasson.

"Delivery Systems for Substance Abuse Treatment", An International Conference was held September 5-7, 2005 in Istanbul, Turkey. Sixty substance experts from the Middle East, the United States and Europe attended the conference. Each of the MERC partners, Drs. Isralowitz, Afifi, El-Dosoky, Loza and Rawson presented data acquired through the MERC project and served as moderators for panel discussion around several of the topics presented. Co-sponsors of this event included the National Institute on Drug Abuse, the World Health Organization, the United Nations Office of Drugs and Crime, the International Society of Addiction Medicine, Substance Abuse and Mental Health Services Administration, the National Institute on Drug Abuse. The intent of this conference was to bring together regional experts to discuss strategies as to how best to integrate substance abuse, mental health and primary care systems. The meeting was deemed a huge success per individual ratings of each of the attendees.

Without the assistance of the MERC investigators, the experience the investigators gained from the MERC projects and the support of USAID, this historic event would not have been possible.

Future Work: Will the project lead to future work? Describe.

This project has lead to the development of additional USAID-MERC applications including the "Drug Abuse Monitoring Systems in Israel and Egyptian Communities". TAU-MOU-02-M23-010 has been underway for several years, administering the Addiction Severity Index, developed by Tom McClellan, Ph.D. at the University of Pennsylvania. Clinical staff has been trained to administer this semi-structured interview to persons entering treatment for drug dependence. This instrument is currently in use in 10 community treatment programs in Israel and 3 community treatment programs in greater metropolitan Cairo, Egypt. Detailed descriptions of the progress of this project can be found in the Semi-annual reports.

A second USAID-MERC application with Israeli and Palestinian Investigators addressing the ever growing problem of tobacco use in Palestinian and Israeli high risk youth has been submitted. The pre-proposal is currently under review.